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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,330	01/04/2002	Tomohiro Ishihara	50212-336	2247

7590 08/02/2004

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EXAMINER	
HOFFMANN, JOHN M	

ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/035,330	ISHIHARA ET AL.
	Examiner	Art Unit
	John Hoffmann	1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) *4 and 5* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Election/Restrictions

Claims 4-6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/13/04.

Applicant's election of Invention I in the reply filed on 7/1304 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Bailey 4157906.

Feature 40 is the muffle tube. As to the muffle temperature: see col. 7, lines 11-12 as well as col. 5, lines 56.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey 5284499 in view of Varner, 6580860, Oh 5702497, Kajioka 5482525 or Sanghera 5294240.

Harvey teaches the concept of drawing fibers in a muffle tube in a furnace but does not teach the temperature below 1800 C. Varner, col. 6, lines 1-9 teaches typical draw temperatuires as low as 1600 C depending upon compostion (as well as other things). Oh, col. 4, lines 50- 55 and Kajioka col. 6, lines 1-5 teach that low draw temperatures reduce scattering loss and structural mismatch. Sanghera, col. 10, lines 47-52 teaches that halide fibers can be drawn at "much lower" temperatures than silica fibers: col. 9, lines 14-15 suggest a temperature around 850 C.

It would have been obvious to use the Harvey furnace at a temperature of less than 1800 C – depending upon the composition of the glass used and/or to reduce scattering loss. One would expect that the muffle tube would be about the same temperature as the preform within it.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey as applied to claim 1 above, and further in view of Urruti 5551967 and Koening 5314517.

Col. 3, lines 1-7 of Urruti discloses that for faster drawing speeds a longer root/meniscus results. Col. 1, lines 46-50 of Koening teaches that longer furnaces correspond to longer roots/meniscuses. It would have been obvious to provide longer hot zone by using longer heating elements so as to create longer roots so as to have faster drawing speeds so as to make more fiber more quickly.

As to claim 3 – it would have been obvious that the longer root is, the more of a taper it would have. It would have been obvious to have the root as long as reasonably possible. It is deemed that the claimed taper would inherently flow from the implemenation of the obvious improvement.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over over Harvey 5284499 in view of Varner, 6580860, Oh 5702497, Kajioka 5482525 or Sanghera 5294240 as applied to claim 1 above, and further in view of Urruti 5551967 and Koening 5314517.

Col. 3, lines 1-7 of Urruti discloses that for faster drawing speeds a longer root/meniscus results. Col. 1, lines 46-50 of Koening teaches that longer furnaces correspond to longer roots/meniscuses. It would have been obvious to provide longer hot zone by using longer heating elements so as to create longer roots so as to have faster drawing speeds so as to make more fiber more quickly.

As to claim 3 – it would have been obvious that the longer root is, the more of a taper it would have. It would have been obvious to have the root as long as reasonably possible. It is deemed that the claimed taper would inherently flow from the implemenation of the obvious improvement.

In addition to the above rationale"

Claim 2: Whereas measurements from patent figures generally cannot be relied upon for specific measurements, the figures can be relied upon to show particular limitations. It is noted from Harvey, figure 2, that preforms have many diameters – depending upon where the diameter measurement is taken. It is reasonable to expect that at the lower end of the Harvey preform is less than $1/8^{th}$ the length of the furnace – especially when one considers that optical fibers are typically 125 microns in diameter (col. 6, line 23). So at a location where the glass is 1000 microns, it would still be part of the preforem – one would expect that the heating element is at least 8000 microns (i.e. 8 mm) in length.

Alternatively: Oh and Kajioka teach the same thing that Applicant does: draw a lower temperature (and higher tension) to reduce scattering. It would have been an obvious matter of routine experimentation to determine the optimal furnace arrangement. One would reasonably expect that the higher draw tension would result in a longer taper region and thus require a longer heating element.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Page 13 of the specification clearly and distinctly defines what is meant by alpha and beta. However the claim uses the term "taper angle" rather than the beta " $\beta 1$ ". The confusion is where page 13, line 3 refers to "taper angle $\beta 1$ ". It is unclear if $\beta 1$ is merely one particular taper angle – or if such is intended to be a definition for "taper angle".

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takahashi and Dudderar are cited as being related to the disclosed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John Hoffmann
Primary Examiner
Art Unit 1731

7-29-04

jmh